

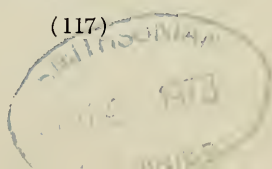
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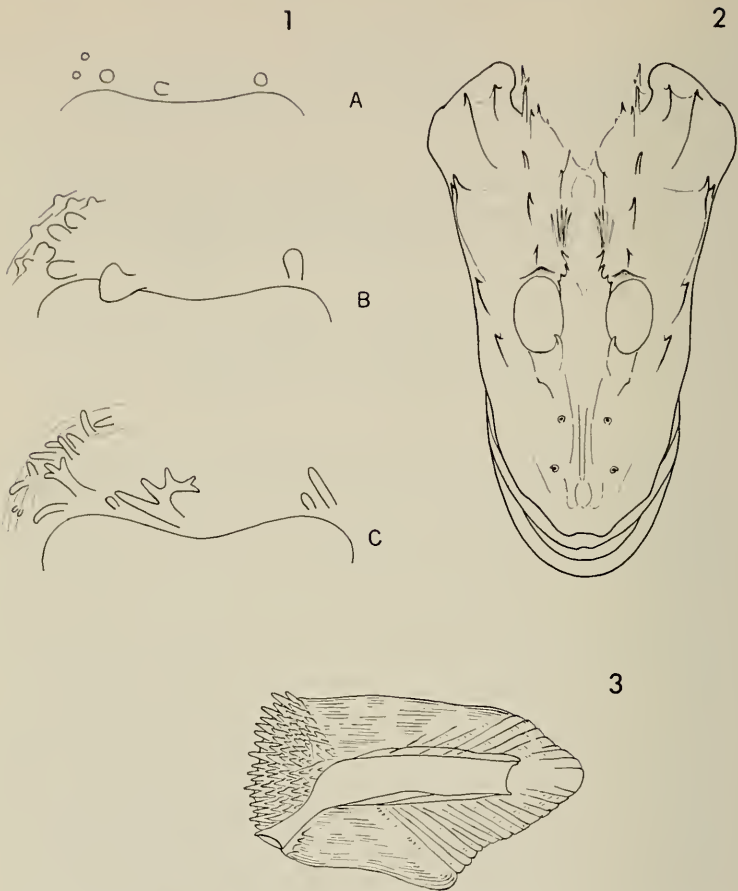
PLATYCEPHALUS BEAUFORTI, A NEW SPECIES
OF FLATHEAD (PISCES, PLATYCEPHALIDAE)
FROM THE WESTERN PACIFIC

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Cuvier (1829:255) gave a brief description of *Platycephalus longiceps*, a new species from the Red Sea that he apparently based on an unpublished drawing by Ehrenberg. Rüppell (1835:103-4) noted the inadequacy of Cuvier's description and placed *P. longiceps* in synonymy (with question marks) of his new Red Sea species, *P. tentaculatus*. Klunzinger (1870:813-15) chose to use the Cuvier name but indicated his approval of Rüppell's action. Günther (1876:166) commented on the status of *P. longiceps* and *P. tentaculatus* and he described a specimen from the Pelew (Palau) Islands under the name of *P. tentaculatus*. The description was partially inadequate but it was accompanied by a particularly fine illustration. Most workers have followed Günther in applying the name *P. tentaculatus* to similar specimens from the western Pacific.

Recently, de Beaufort (1962:136) placed *P. tentaculatus* in synonymy of *P. longiceps* but questioned whether specimens from the Red Sea represented the same species as those from the western Pacific. I recognize the western Pacific specimens as a new species of the subgenus *Cymbacephalus* Fowler. Usage of the name *P. longiceps* should be restricted to those populations in the western Indian Ocean and Red Sea characterized by a single, unbranched dermal flap over the eye, small brown punctae on back and top of head, pored lateral line scales with two canals to the exterior and lacking a pit behind the eye. *Cymbacephalus* is arbitrarily assigned sub-





FIGS. 1-3. *Platycephalus beauforti*, new species: 1. Development of dermal flaps, upper eye, at different sizes (right side is anterior). A, 74 mm SL; B, 137 mm SL; C, 248 mm SL. 2. Outline of cranial spines of holotype, CAS 15768. 3. Tenth pored scale, right side, CAS 15767.

generic status here. The subgenus is distinguished by the presence of a pit behind the eye.

A total of 41 specimens examined of *P. beauforti*, 18 specimens of *P. nematophthalmus* and one specimen of *P. parilis* were from the following sources: American Museum of Natural History (AMNH); Bernice P. Bishop Museum

(BPBM); British Museum of Natural History (BMNH); California Academy of Sciences (CAS); Museum of Comparative Zoology, Harvard (MCZ); National Museum of Natural History (USNM) and Zoological Museum, University of Copenhagen (ZMUC).

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Counts and measurements follow the procedures listed by Hubbs and Lagler (1958:19–26) with the following exceptions: diagonal scale count was taken by starting with the scale nearest second dorsal origin and proceeding downward and backward to but not including the pored lateral line scale; the interpelvic scale count was the least number of scales in a straight line between pelvic bases; diameter of orbit was measured from lower, rear margin to base of preocular spine; standard, head and snout lengths were measured from tip of mandible and not from tip of snout; and height of dorsal spine was measured from base at rear of spine to tip.

***Platycephalus* (*Cymbacephalus*) *beauforti*, new species**

Figures 1–4

Platycephalus tentaculatus Günther (nec Rüppell), 1876:166 (pl. 107, figs. A and B); Pelew Is.—Meyer, 1885:21; Cebu I., Philippine Is.—Asano, 1936:414–20; Palao.—Abe, 1939:576; Palao Is.

Thysanophrys tentaculatus Herre, 1934:67; Culion, Jolo, Philippine Is.—Herre, 1935:165; Pelew Is.

Platycephalus longiceps de Beaufort (nec Cuvier), 1962:134–36; Singapore, Java?, Borneo, Kei Is., Pelew Is.

TABLE 1. Characters separating the species of *Platycephalus* (*Cymbacephalus*)

Characters	<i>P. beauforti</i>	<i>P. nematophthalmus</i>	<i>P. parilis</i>
Number of dermal flaps on upper surface of eye	Often 10-12 in adults	Usually 6-8	Lacking
Shape and location of major dermal flap on eye	Antler-shaped (Fig. 1C), not reaching supraorbital ridge	An elongated central stalk with many lateral flaps, reaching well above supraorbital ridge	Lacking
Inner pelvic ray	Simple	Simple	Branched
Location of posterior margin of maxilla	Well in front of eye	Behind anterior margin of eye	Behind anterior margin of eye
Number of suborbital spines	Two	One	Two
Number of oblique scale rows slanting backward above the lateral line	Closely approximates number of pored scales	More than pored scales	More than pored scales
Short brown vertical stripes on second dorsal and caudal fins	Absent	Usually present	Absent
Nasal spines	Absent	Usually present	Absent

Diagnosis: A species of the subgenus *Cymbacephalus* Fowler with a pit behind the eye; a series of fleshy dermal flaps on the upper surface of the eye; prominent interopercular flap with several broad projections; inner pelvic ray simple; posterior margin of maxilla well in front of anterior margin of eye; two suborbital spines; number of oblique scale rows slanting backward above the lateral line closely approximating the number of pored scales; nasal spines usually lacking; and short, brown, vertical stripes not present on second dorsal and caudal fins. Characters separating the three species of the subgenus *Cymbacephalus*, *Platycephalus beauforti*, *P. nematophthalmus* Günther, and *P. parilis* (McCulloch) are presented in Table 1.

Ranges are given followed by a parenthesis containing two numbers separated by a comma for most of the characters considered in the following description. The first number is the value for the holotype and the mean is the second number.

Description: Dorsal rays usually I,VIII-11(I,IX-11 in two paratypes); anal rays 11; pectoral rays 19-21(19,19.8); pelvic rays I,5; vertebrae (11-12) + (15-16) = 27(11 + 16 in holotype); interpelvic scales 27-38(28,31.9); diagonal scales 13-17(14,14.9); and pored lateral line scales 50-55(52,52.6). Interorbital width 3.2 times in diameter of orbit in smaller specimens and the ratio decreases progressively to 1.5 times in large specimens (2.2 in holotype). A similar trend is indicated by the ratio of orbit diameter into head length so it appears that the orbit is relatively larger in juvenile specimens. Orbit diameter 2.4-3.2(2.5,2.9) times into distance from orbit to tip of mandible, distance from orbit to tip of mandible 2.2-2.5(2.4,2.4) times in head length and head length 2.3-2.8(2.7,2.6) times in standard length. Height of first dorsal spine 3.2-7.3(3.9,3.9) times into second spine. Nape, preopercle, opercle, back and sides covered with ctenoid scales, abdomen and breast with cycloid scales. The first two (three in 10 paratypes) pored scales in the lateral series with spines.

The arrangement of cranial spines in the holotype appears in Figure 2. Nasal and preorbital spines lacking; a single preocular spine; interorbital space concave; supraorbital ridge entire except for a few spines posteriorly at border of pit, a series of fine ridges radiating out behind last spine; and usually two, short preopercular spines, the upper only slightly longer.

Variation in numbers of branched and unbranched pectoral rays is correlated with growth, the following approximation with some overlap, taken from 36 specimens. All rays were unbranched in juveniles below 60 mm SL; usually iii,4-8,ix-xiii at 74 to 100 mm SL; usually ii,8-11,vii-x at 100 to 200 mm SL(ii,8,ix in holotype); and usually i,11-14,vi-viii above 200 mm SL.

Pit behind eye poorly developed in juveniles. Teeth villiform, in bands in jaws and palatines and in two discrete vomerine patches. Pelvic fin rounded. Umbraculum or iris lappet cirrose. Lateral line scale pores

elongate, with a single tube to the exterior that is usually directed ventrad (Fig. 3). Typically, the duct is directed upward in some of the pored scales near the hypural plate. Similar pore patterns have been noted in *Ratabulus megacephalus* (Tanaka) by Matsubara and Ochiai (1955:9) and in most flatheads with pored scales having single ducts to the exterior by the author. Interopercular flap well developed, usually broader than long and with several subdivisions. Anterior nostril with a flat, elongate, elliptical flap that tends to become slightly crenulate in large specimens.

Dermal flaps appear on the upper surface of the eye as a few "warts" in smaller specimens (Fig. 1A), increase in number and show signs of incipient branching in two flaps (Fig. 1B), and develop branches in two or three flaps in older specimens (Fig. 1C). There are usually one or two simple flaps anteriorly, a major branched flap behind the middle of the eye and numerous simple and one or two branched flaps on the upper rear surface.

Color pattern in preserved specimens: Back and top of head usually dark brown; lower sides frequently with irregular dark brown blotches; all fins mottled with combinations of small and large dark blotches which tend to form bands in some specimens, especially the pelvic and first dorsal; jaws with dark blotches, best developed on mandible and maxilla; and abdomen light but breast streaked with brown anteriorly in some.

Habitat: Specimens of *P. beauforti* included in the study were captured at depths to 25' but were most commonly taken at from 5' to 10'. Most reportedly came from rocks or coral with eel grass and mangroves nearby in a few cases.

Range: Of the three species of the subgenus, *P. nematophthalmus* appears to be most widely distributed and is found from Australia to Singapore and the Philippines. The range of *P. parilis* is primarily restricted to Australia and, according to Munroe (1967:528), to coastal waters of New Guinea. *Platycephalus beauforti* is known from Yap, the Palaus, the Philippines, Duke of York Island near New Britain, and the Tobriand Islands near New Guinea. The record from Java by Kner (1865:122-23) is questionable and de Beaufort (1962:136) also included Singapore although I have not seen any specimens from there.

Etymology: This species is named in honor of the late Dr. L. F. de Beaufort who, in addition to his many notable contributions to ichthyology, at the age of 88 wrote a most informative and encouraging letter to me concerning the need for a revision of the Platycephalidae.

In the following list of material, the number of specimens (when more than one) and range of standard lengths (mm) appear in parentheses after the catalog or station number. Paratypes are all from the Palau and Caroline Is.

Holotype: CAS 15768 (191): Palau Is., Urukthapel I., Garamejo region, Ngaremedin district, fringing reef on first projecting cape W of beach, 7°15'15"N, 134°26'51"E; H. A. Fehmann and party; 31 July 1955.

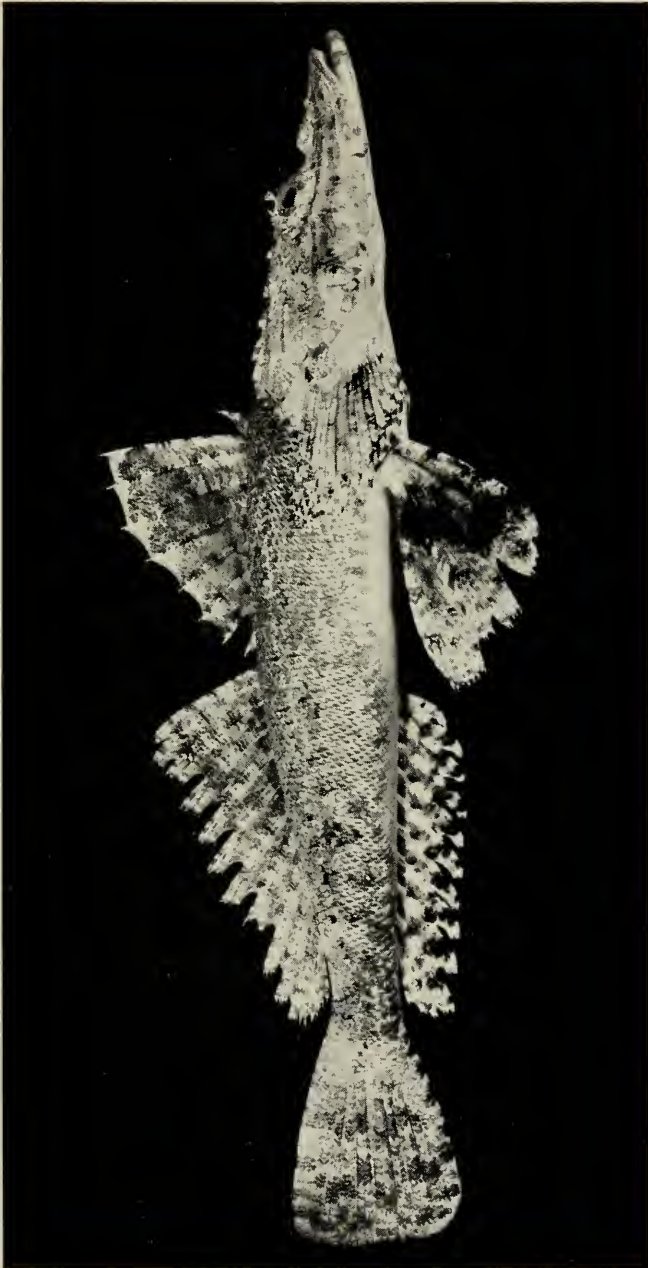


FIG. 4. Right side of paratype of *Platycephalus beauforti*, BPBM9641, Palau Is., 287 mm SL.

Paratypes: BPBM 9641 (287), Urukthapel I.; USNM 208427 (212), Urukthapel I.; BMNH 1972.12.5.3 (200), Urukthapel I.; CAS 15745 (412), Palau Is.; CAS 15746 (265), Peleliu; CAS 15747 (4,155-289), Nardueis; CAS 15748 (3,41-57), Arakabesan; CAS 15749 (2,79-104), Auluptagel; CAS 15750 (111), Auluptagel; CAS 15751 (246), Auluptagel; CAS 15765 (74), Auluptagel; CAS 15752 (2,165-204), Auluptagel; CAS 15753 (331), Kuror; CAS 15754 (2,210-224), Kuror; CAS 15755 (91), Kuror; CAS 15756 (87), Kuror; CAS 15757 (212), Kuror; CAS 15758 (254), Babelthuap; CAS 15759 (3,262-407), Babelthuap; CAS 15761 (2,372-406), Babelthuap; CAS 15764 (2,289-395), Yap; CAS 15763 (69), Yap; CAS 15760 (133), Yap; CAS 15766 (137), Yap; CAS 15767 (248), Yap.

Comparative material examined: *P. beauforti* (not paratypes): USNM 208428 (453), New Guinea, Tobriand Is., Kiriwinna I., N coast off Towai Point, B. B. Collette and party, 8 June 1970; USNM 151100 (82), Philippines, Cebu market; USNM 209158 (189), Duke of York Is., Keraward I., St. George Channel between New Britain and New Ireland, D. Cohen and W. Davis. *P. nematophthalmus*: MCZ 13804 (10,111-151), Singapore; MCZ 30513 (223), Makassar, Celebes; ZMUC Galathea Exped. 1950-52, sta. 337 (210), Singapore; AMNH S69-10 (49), Little Hope I., Australia; BMNH 1855.9.19.96 (186), Port Essington, Australia; GVF Walter Brown Philippine Exped. 1960-61, sta. A-5 (2,212-236), sta. A-14 (185), sta. A-16 (162). *P. parilis*: USNM 173885 (368), Darwin, Australia.

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